

REMARKS

By the present amendment claim 1 has been amended to clarify the invention.

Claims 2-5 have been canceled without prejudice.

Claims 1 and 7 are thus pending in the application.

In the Final Office Action, the Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2002/0056134 A1 to Abe et al. in view of U.S. Patent U.S. Patent Number 5,994,965 to Davis et al.

Claims 2 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2001/0007151 A1 to Vorenkamp et al. in view of U.S. Patent No. 6,112,232 to Shahar et al. and Johannes.

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Vorenkamp et al. in view of Shahar et al. and Johannes and further in view of U.S. Patent No. 6,725,463 to Birleson.

Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Vorenkamp et al. in view of Shahar et al. and Johannes and further in view of U.S. Patent No.5,930,696 to Tzuang et al.

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Abe et al., Vorenkamp et al., Shahar et al. and Johannes.

In view of the arguments that follow, Applicant respectfully traverses the Examiner's rejection of claims 1 and 7.

Rejection Under 35 U.S.C. § 103(a)

The Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Abe et al. in view of Davis et al. The rejection is respectfully traversed.

Applicant's amended claim 1 recites a cable modem tuner comprising an upstream circuit for transmitting a data signal to a CATV (cable television) station, wherein said upstream circuit includes a gain controllable gain control circuit receiving said data signal, at least one power amplifying circuit power-amplifying the data signal having been gain controlled by said gain control circuit, and a control circuit transmitting a control signal to said at least one power amplifying circuit for controlling transmission/interruption of said data signal.

With respect to claim 1, the Examiner alleged that the combination of Abe et al. and Davis et al. disclose the claimed invention as set forth in independent claim 1. Specifically, the Examiner alleged that Abe et al. fail to disclose a gain controllable gain control circuit, and at least one power amplifying circuit power-amplifying the data signal having been gain controlled by said gain control circuit.

To cure the deficiencies of Abe et al., the Examiner alleged that Davis et al. disclose a variable-gain amplifying circuit comprising a gain controllable gain control circuit (variable attenuator 25) for receiving a data signal, and a power amplifying circuit (high-power amplifier 330) power-amplifying the data signal having been gained controlled by the gain

control circuit. According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Abe et al. to include a gain controllable gain control circuit for receiving a data signal, and a power amplifying circuit power-amplifying the data signal having been gain controlled by said gain control circuit, for the purpose of automatically maintaining a predetermined overall gain in a cable modem upstream transmitter.

Applicant respectfully submits that neither Abe et al. nor Davis et al., taken singly or in combination, (assuming these teachings may be combined, which Applicant do not admit) disclose or teach an upstream circuit in a cable modem tuner that includes "a gain controllable gain control circuit receiving said data signal, at least one power amplifying circuit power-amplifying the data signal having been gain controlled by said gain control circuit, and a control circuit transmitting a control signal to said at least one power amplifying circuit for controlling transmission/interruption of said data signal," as recited in claim 1.

Abe et al. disclose inputting an upstream signal to a transmission processing section via input terminals to adjust the transmission signal at an optimal level. The transmission processing section receives the signal and controls a gain by a variable gain amplifier. However, Abe et al. merely controls the gain in a variable gain amplifier and fail to correspond to a power amplifying circuit for power amplifying a data signal that is gain controlled by the gain control circuit. Furthermore, the control signals inputted to the

transmission processing section of Abe et al. is not analogous to an input control signal inputted to “at least one power amplifying circuit.” Therefore, Abe et al. fail to disclose “a gain controllable gain control circuit receiving said data signal, at least one power amplifying circuit power-amplifying the data signal having being gain controlled by said gain control circuit, and a control circuit transmitting a control signal to said at least one power amplifying circuit for controlling transmission/interruption of said data signal,” as claimed.

Davis et al. do not cure the deficiencies of Abe et al. Davis et al. merely disclose a high power amplifier that includes a variable attenuator for varying the amount of attenuation of a RF signal passing therethrough. The RF output of the variable attenuator feeds to an input of the high power amplifier, which is used to amplify the RF signal input. If the gain of the high power amplifier increase causing a gain measured between the input of the variable attenuator and the high power amplifier to increase above a predetermined gain level, an analog controller increases the level of attenuation provided by the attenuator by adjusting the gain control voltage supplied thereto. Although the RF output of the variable attenuator feeds into the input of the high power amplifier, there is nothing in Davis et al. that disclose transmitting a control signal from a control circuit “to said at least one power amplifying circuit for controlling transmission/interruption of said data signal.” Moreover, the incorporation of Davis et al. variable attenuator and high-power amplification (as alleged by the Examiner) into Abe et al.’s cable modem is not obvious, since Abe et al. controls gain in a variable gain amplifier and not a power amplifier.

In view of the above reasons, Applicant respectfully submits that Abe et al. in view of Davis et al., taken singly or in combination, do not disclose the claimed invention of claim 1 and the rejection of claim 1 should be withdrawn.

With respect to claim 7, the Examiner alleged that the combination of Abe et al., Vorenkamp et al., Shahar et al. and Johannes disclose the claimed invention. Specifically, the Examiner alleges that Vorenkamp et al. disclose a cable modem tuner comprising a receiving unit for receiving a down signal from a CATV station (page 34, paragraph 404), wherein said receiving unit includes an up-counter (first mixed 506 and amplifier 514) for converting said down signal to a first intermediate frequency signal of higher frequency (page 7, paragraph 118), a filter for selecting the first intermediate frequency signal output from said up converter (band pass filter located between amplifiers 514 and 516), and a down converter (amplifiers 516 and 518, second mixed 508) converting the first intermediate frequency signal selected by said filter to a second intermediate frequency signal of lower frequency for output.

The Examiner admits that Vorenkamp et al. fail to explicitly disclose that said filter is a SAW filter and said SAW filter is formed of an oscillation circuit including a print coil or an air coil. To make up for the deficiencies of Abe et al. and Vorenkamp et al., the Examiner alleged that Shahar et al. disclose a SAW filter for the purpose of lowering cost (col. 9, lines 4-6) and additionally, Johannes discloses a SAW filter formed of an oscillation circuit (resonator) including a print coil (printed strip lines in Fig. 1a) for the purpose of providing high stopband rejection (col. 1, lines 4-5).

Applicant respectfully submits that neither Abe et al., Vorenkamp et al., Shahar et al. nor Johannes disclose or teach a cable modem tuner that includes "an up converter for converting said down signal to a first intermediate frequency signal output from said up converter, a SAW filter for selecting the first intermediate frequency signal output from said up converter, and a down converter converting the first intermediate frequency signal selected by said SAW filter to a second intermediate frequency signal of lower frequency for output," as recited in claim 7.

Again, Abe et al. merely disclose a variable gain amplifier that controls the gain of an upstream signal. However, the variable gain amplifier in Abe et al. fail to correspond to at least one power amplifying circuit for power amplifying a data signal that is gain controlled by the gain control circuit.

Vorenkamp et al., do not make up for the deficiencies of Abe et al. Vorenkamp et al. merely disclose a dual or double conversion receiver that allows distortion and stability to be controlled when a received signal is first mixed to a first intermediate frequency and then mixed down to a second intermediate frequency (see page 7, paragraph 118). However, the mixed down to a second intermediate frequency of Vorenkamp et al. is a signal received from an amplifier and not from "a SAW filter." There is nothing in Vorenkamp et al. that disclose "a SAW filter for selecting the first intermediate frequency signal output from said up converter" and then converting the selected signal from the SAW filter by "a down converter" to a "second intermediate frequency signal of lower frequency for output."

Shahar et al. do not make up for the deficiencies of Abe et al. and Vorenkamp et al. Shahar et al. disclose a SAW filter to lower cost. However, the SAW filter in Shahar et al. do not select a “first intermediate frequency signal output from said up converter” so that a down converter converts “the first intermediate frequency signal selected by said SAW filter to a second intermediate frequency signal of lower frequency for output.”

Moreover, Johannes does not make up for the deficiencies of Abe et al. Vorenkamp et al. and Shahar et al. Johannes merely discloses a SAW resonator filter in mobile phones as an interfrequency filter for stopband rejection.

Applicant also respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, the proposed modification of the prior art must have had a reasonable expectation of succeeding, as determined from the vantage point of a skilled artisan at the time the invention was made. Third, the prior art references, when combined, must teach or suggest all the claim limitations. See M.P.E.P. § 2143.

In view of the above reasons, Applicant respectfully submits that the asserted combination of Abe et al. and Davis et al. fail to establish a *prima facie* case of obviousness of independent claim 1, or any claim depending therefrom. Moreover, the asserted combination of Abe et al., Vorenkamp et al., Shahar et al. and Johannes fail to establish a *prima facie* case of obviousness of independent claim 7.

Applicant further submits that the Examiner's conclusion in claims 1 and 7 are based on improper hindsight reasoning. See M.P.E.P. § 2142. The Examiner may not utilize the Applicant's own disclosure as motivation for altering a reference that lack sufficient disclosure to teach the Applicant's claimed invention. Accordingly, Applicant respectfully submits the rejection of claims 1 and 7 should be withdrawn, or any claim depending therefrom.

Conclusion

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1 and 7 in condition for allowance. Applicant respectfully requests the reconsideration and reexamination of this application and the timely allowance of the pending claims.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of \$110.00 is attached hereto.

Finally, Applicant submits that the entry of the amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for

any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
Charles Gorenstein, #29,271

CGS
CG/DSS/kmr
0033-0785P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000